<u>REMARKS</u>

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-14 and 16-39 are currently pending. Claims 1, 16-18, 21, and 34 have been amended; and Claim 15 has been canceled without prejudice by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 1-4, 7, 10, 11, 20-24, and 30-36 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,983,237 to Jain et al. (hereinafter "the '237 patent") in view of Kohonen et al. ("Self-organization of a Massive Document Collection"); Claims 5, 6, 8, 9, and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over the '237 patent and the Kohonen et al. reference, further in view of U.S. Patent No. 5,754,938 to Herz et al. (hereinafter "the '938 patent"); and Claims 12-18, 25-29, and 37-39 were rejected under 35 U.S.C. §103(a) as being unpatentable over the '237 patent and the Kohonen et al. reference, further in view of U.S. Patent Application Publication No. 2002/0138487 to Weiss et al. (hereinafter "the '487 application").

Amended Claim 1 is directed to an information retrieval system in which a set of distinct information items mapped to respective nodes in a self-organizing map by mutual similarity of the information items, so that similar information items map to nodes at similar positions in the self-organizing map, the system comprising: (1) a user control for defining a search criterion for selecting information items; (2) a detector for detecting those positions within the self-organizing map corresponding to the selected information items; (3) a graphical user interface for displaying display points representing those positions within the self-organizing map corresponding to the selected information items; and (4) a processor,

responsive to the selected information items defined by the search criterion, for providing one or more representations representative of the information content of the selected information items. Further, Claim 1 has been amended to incorporate the limitations recited in Claim 15. In particular, amended Claim 1 recites that the information items are at least associated with image items comprising image data, and that the processor is responsive to the selected information items and provides one or more image items representative of the information content of the selected information items defined by the search criterion. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.[1]

Applicants respectfully submit that the rejection of Claim 1 is rendered moot by the present amendment to Claim 1. However, since Claim 1 has been amended to incorporate limitations recited in Claim 15, Applicants will address the references cited in the rejection of Claim 15.

Regarding the rejection of Claim 15, the Office Action asserts that the '237 patent discloses everything in Claim 15 with the exception of a self-organizing map and the claimed image items, and relies on the Kohonen et al. reference and the '487 application to remedy those deficiencies. Further, regarding the motivation to combine the teachings of the '237 patent and those of the Kohonen et al. reference, the Office Action asserts that one of ordinary skill in the art would have been motivated to make the combination "to be able to map any representative subset of old input data and new input items straight into the most similar models without ... computation of the whole mapping."[2] Further, the Office Action asserts that the '237 patent and the Kohonen et al. reference are directed to analogous art and that there would have been an expectation of success in the suggested combination.

The '237 patent is directed to a visual query processing method including the steps of providing a user query; applying the user query to a visual dictionary that includes a plurality

---

[1] See, e.g., original Claim 15 and page 15, line 21 of the specification.
[2] Outstanding Office Action, pages 3 and 4.

of feature vectors so as to generate a set of query vectors; and applying the query vectors to

an image database comprising a plurality of images so as to provide a list of similar images.

Further, the '237 patent discloses a set of queries based on descriptors of images to search a

database, wherein the descriptors are compared with stored descriptors and are judged to see

if they are within a "ballpark" approximation of the feature region.[3] Thus, the '237 patent

discloses the use of <u>selected, separate, and direct comparisons for different features</u> of an

image.

However, as admitted in the outstanding Office Action, the '237 patent fails to

disclose a self-organizing map. Thus, the '237 patent must also fail to disclose a detector for

detecting positions within a self-organizing map, and a graphical user interface for displaying

display points representing positions within the self-organizing map, as required by Claim 1.

Moreover, Applicants respectfully submit that the system disclosed by the '237 patent

operates in a fundamentally different fashion than that of a self-organizing map, as recited in

Claim 1. The '237 patent discloses that different comparisons with different image

descriptors each count as a query and that the results are added together to find the best

matches in the database, and that the descriptors can be based on the image or on text. Thus,

as discussed in more detail below, the '237 patent discloses a system that is in direct contrast

to how self-organizing maps operate since self-organizing maps compare all the features

simultaneously, while the '237 patent teaches against the possibility of using a self-

organizing map or other neural network.

Further, Applicants respectfully submit that the '237 patent fails to disclose that the

information items are at least associated with <u>image items comprising image data</u>, and that

<u>the processor provides one or more image items representative of the information content of</u>

<u>the selected information items defined by the search criteria</u>, as recited in amended Claim 1.

---

[3] See Figures 6 and 7 and column 7, lines 10-23 and column 10, lines 45-58 in the '237 patent.

In this regard, Applicants note that column 9, lines 25-36 of the '237 patent, cited in the outstanding Office Action, merely refers to an image query in which the features that overlap with an example feature vector are identified. Thus, the '237 patent discloses that a list of feature values or a corresponding list of similar images is returned by the system in response to the query. However, the '237 patent does not disclose a processor that provides one or more image items representative of the information content of the selected information items, wherein the image items comprise image data, as required by amended Claim 1.

The Kohonen et al. reference discloses a self-organizing map for organizing a massive document collection using feature vectors comprising a statistical representation of the vocabularies of the documents. However, Applicants respectfully submit that the Kohonen et al. reference fails to disclose that the information items are at least associated with image items comprising image data, and that the processor provides one or more image items representative of the information content of the selected information items defined by the search criteria. Rather, the Kohonen et al. reference discloses the processing of text and the construction of a document vector as a weighted word histogram in the creation of a self-organizing map.

The '487 application is directed to hierarchical clustering of websites according to common features, and the presentation of labeled continents and countries, the size of which are proportional to the number of websites deemed relevant to a user's search query.[4] As shown in Figure 6, the '487 application discloses that the names of the clusters that contain instances of search words are presented to the user. However, Applicants respectfully submit that the '487 patent fails to disclose information items that are at least associated with image items comprising image data, and <u>a processor that provides one or more image items representative of the information content of the selected information items defined by a</u>

---

[4] See '487 application, paragraphs [0137]-[0139].

<u>search criteria</u>, as recited in amended Claim 1. Rather, the '487 patent discloses that a list of words is searched rather than information items that are associated with image data items comprising image data, as recited in amended Claim 1.

Thus, no matter how the teachings of the '237 patent, the <u>Kohonen et al.</u> reference, and the '487 application are combined, the combination does not teach or suggest information items that are at least associated with image items comprising image data, and <u>a processor that provides one or more image items representative of the information content of the selected information items defined by the search criteria</u>, as recited in amended Claim 1. Accordingly, Applicants respectfully submit that amended Claim 1 patentably defines over any proper combination of the '237 patent, the <u>Kohonen et al.</u> reference, and the '487 application.

In the outstanding Office Action, the stated motivation for combining the teachings of the '237 patent and the <u>Kohonen et al.</u> reference is "to be able to map any representative subset of old input data and new input items straight into the most similar models without … computation of the whole mapping."[5]

However, Applicants respectfully submit that the '237 patent *teaches away* from the use of the self-organizing maps disclosed by <u>Kohonen et al</u>. The '237 patent specifically teaches the use of selected, separate, and direct comparisons for different features of the image, which is in direct contrast to how self-organizing maps operate, as they compare all features simultaneously. Thus, the '237 patent teaches away from the possibility of using a self-organizing map, as taught by <u>Kohonen et al.</u>

In this regard, Applicants respectfully traverse the assertion in the outstanding Office Action that the '237 patent and the <u>Kohonen et al.</u> reference are directed to analogous art and that, because both references are directed to database management systems, there would be a

---

[5] See pages 3 and 4 of the outstanding Office Action.

14

high expectation of success, as asserted in the outstanding Office Action. On the contrary, Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to combine the teachings of the '237 patent and the Kohonen et al. reference because such a combination would lead to a nonsensical system. In such a combined system, the selected, separate, and direct comparisons for different features of an image, as taught by the '237 patent, would have to be performed at the same time as the comparison of all of the features simultaneously, as taught by Kohonen et al.'s self-organizing maps. Thus, Applicants respectfully submit that one of ordinary skill in the art would have no expectation of success in combining such unrelated and fundamentally different systems.

Further, Applicants note that the outstanding Office Action does not provide motivation for combining the teachings of the '487 application with the combined '237 patent and Kohonen et al. system. The '487 application does not disclose the use of self-organizing maps and would not have provided one of ordinary skill in the art with any type of motivation for combining self-organizing map of the Kohonen et al. reference with the system disclosed by the '237 patent. Thus, since the '237 patent teaches away from the use of self-organizing maps, Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to further combine the teachings of the '487 patent with the teachings of the Kohonen et al. reference and the '237 patent.

For the reasons stated above, Applicants respectfully submit that a *prima facie* case of obviousness has not been established and that the rejection of Claim 1 should be withdrawn.

Independent Claims 21 and 34 recite limitations analogous to the limitations recited in Claim 1. Moreover, Claims 21 and 34 have been amended in a manner analogous to the amendment to Claim 1. Accordingly, for reasons analogous to the reasons stated above for the patentability of Claim 1, Applicants respectfully traverse the rejections of Claim 21 and 34 (and all associated dependent claims).

Application No. 10/723,422
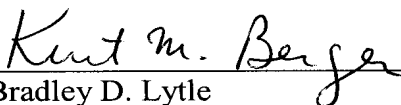Reply to Office Action of February 9, 2007.

Regarding the rejection of dependent Claims 5, 6, 8, 9, and 19 under 35 U.S.C. §103,

Applicants respectfully submit that the '938 patent fails to remedy the deficiencies of the

'237 patent, the '487 application, and the Kohonen et al. reference, as discussed above.

Accordingly, Applicants respectfully traverse the rejection of Claims 5, 6, 8, 9, and 19.

Thus, it is respectfully submitted that independent Claims 1, 21, and 34 (and all

associated dependent claims) patentably define over any proper combination of the '237

patent, the '938 patent, the '487 application, and the Kohonen et al. reference.

Consequently, in view of the present amendment and in light of the above discussion,

the outstanding grounds for rejection are believed to have been overcome. The application as

amended herewith is believed to be in condition for formal allowance. An early and

favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Kurt M. Berger, Ph.D.
Registration No. 51,461

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 03/06)
KMB/rac

I:\ATTY\KMB\282'S\282531US\282531US-AM.DOC

16